INVESTIGATION USING DATA FROM ERTS TO DEVELOP AND IMPLEMENT UTILIZATION OF LIVING MARINE RESOURCES

William H. Stevenson and Edward J. Pastula, Jr.
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Fisheries Engineering Laboratory
Mississippi Test Facility
Bay Saint Louis, Mississippi 39520

September 1973

Type I Report for Period July 20 to September 10, 1973

Principal Investigator: William H. Stevenson
Project Number: 240
CSFC ID Number: CO 321
Contract Number: S-70246-AG

Prepared for
GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland 20771

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.

4. Title and Subtitle	5. Report Date
INVESTIGATION USING DATA FROM ERTS TO DEVELOP AND IMPLEMENT UTILIZATION OF LIVING MARINE RESOURCES	September 1973
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
William H. Stevenson & Edward J. Pastula, Jr.	

9. Performing Organization Name and Address	10. Work Unit No.
NOAA, National Marine Fisheries Service Fisheries Engineering Laboratory, MTF Bay Saint Louis, Mississippi 39520	11. Contract or Grant No. S-70246-AG
	13. Type of Report and Period Covered Type I Report, July 20 To September 10, 1973

12. Sponsoring Agency Name and Address	14. Sponsoring Agency Code
NASA Goddard Space Flight Center Greenbelt, Maryland 20771 Technical Monitor: Mr. G. Richard Stonesifer	

15. Supplementary Notes

16. Abstract

The primary objective of this experiment is to demonstrate the feasibility of using satellite imagery to determine the availability and distribution of adult Gulf menhaden B. patronus within the Mississippi Sound and adjacent waters. Secondary objectives are: 1) determine the effectiveness and reliability of ERTS and aircraft remote sensing data to provide fisheries-significant coastal oceanographic information, and 2) ascertain the usefulness of these and other resource data for improving resource harvesting and management. Selected oceanographic, meteorological, and biological parameters are being used as indirect indicators of the resource. Synoptic sea-truth, fishery sampling and weather data, as well as photo and thermal IR imagery, have been acquired as data inputs, and a computer program has been developed to manipulate these data according to user requirements. The experiment is producing correlations between satellite, aircraft, fisheries, and environmental sea-truth data. The resulting information is being used to minimize the effort needed for resource distribution studies, and also provide new areas of investigation for satellite and aircraft remote sensing.

17. Key Words (Selected by Author(s))	18. Distribution Statement
ERTS-1, Remote Sensing, Fisheries, Mississippi Sound, Imagery Analysis, Menhaden Distribution, Data Management, Marine Resource, Oceanography	

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price*
UNCLASSIFIED	UNCLASSIFIED		

*For sale by the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

1.0 INTRODUCTION

This progress report is the sixth in a series under NASA/ERTS-1 Project No. 240, GSFC ID No. CO 321, Contract No. S-70246-AG, and covers the reporting period from July 20 through September 10, 1973. Previous Type I reports were submitted on September 20 and November 5, 1972; and June 11, 1973. A combined Type I/Type II report, retitled "Interim Report", covering the period July 1 to March 10, 1973 was submitted during June 1973. The last type II report, which covered the period from January 20 through July 20, 1973, was submitted in July 1973.

The primary objective of this experiment is to demonstrate and establish the feasibility of utilizing satellite imagery to determine the availability and distribution of the adult Gulf menhaden B. patronus within the Mississippi Sound and adjacent waters. Secondary objectives are: 1) determine the effectiveness and reliability of ERTS and aircraft remote sensing data to provide fisheries significant coastal oceanographic information, and 2) ascertain the usefulness of these and other resource data for improving resource harvesting and management. Selected oceanographic, meteorological, and biological parameters are being used as indirect indicators of the source.

The study is being conducted through implementation of four subexperiments categorized as Utilization, Living Marine Resources, Oceanographic, and Aerospace. Synoptic sea-truth, fishery sampling and weather data, as well as photo and thermal infrared imagery, have been acquired as data inputs, and a computer program is being utilized to manipulate these data according to user requirements.

Participants of this cooperative venture include various Federal, state and local government agencies, universities, and commercial groups. The experiment is producing correlations between satellite, aircraft, fisheries, and environmental sea-truth data. The resulting information is being used to facilitate development of minimum levels of effort required to obtain data for resource distribution studies, and to provide insight into areas of investigation applicable to remote sensing as a tool for resource assessment and monitoring.

2.0 WORK SUMMARY

We are continuing to analyze the ERTS-1 and associated aircraft, oceanographic and fishery resource data. Preparation is in progress for the project's Final Report generation. To this end, we submitted our Final Report proposed text outline and tentative lists of report figures and appendices on August 30, 1973 to the cognizant NASA officials as per our contractual agreement.

3.0 SCHEDULE STATUS

All scheduled activities are proceeding according to plan. Our Phase III activity will terminate on October 15, 1973 and we are scheduled to submit the required number of Final Report draft copies by November 15, 1973.

4.0 WORK PROGRESS

The technical paper titled "A Summary of Selected Early Results from the ERTS-1 Menhaden Experiment" by A. J. Kemmerer; J. A. Benigno; G. B. Reese, and F. C. Minkler has been reviewed and accepted for publication in the Fishery Bulletin.

5.0 PLANNED ACTIVITIES

Pending approval of those documents noted in Section 2, we plan to generate the Final Report draft and submit it according to schedule.